

(1b)

How many ways can you arrange the 4 letters A, B, C, D?

6

[	ABCD
	ABDC
	ACBD
	ACDB
	ADBC
	ADCB

[ B

[ C

[ D

= 24  
if order  
matters

= order  
doesn't  
matter  
1

D - 1  
CD - 2  
BCD = 6  
ABCD = 24

(1b)

$$\frac{25 \cdot \cancel{24} \cdot 23 \cdot 22}{\div 24}$$

$$= 12,650$$

(1a)

$$\frac{10 \cdot 9 \cdot 8 \cdot 7 \cdot 26}{25 \cdot 24}$$

$$= 78,624,000$$

② George

	70%	30%
80%	2 pts $0.7 \cdot 0.8$	0 pts $1 \cdot 0.30$
20%	1 pt. $0.20 \cdot 0.70$	

$$0.56 \cdot 2 \text{ pts} = 1.12$$

$$0.14 \cdot 1 \text{ pt} = 0.14$$

$$0.30 \cdot 0 \text{ pts} = 0.00$$

$$\boxed{1.26}$$

③ We have an "and" situation, means multiply

$$\textcircled{a} P(\spadesuit, 3\heartsuit) \Rightarrow \frac{13}{52} \cdot \frac{1}{51} = \frac{13}{2652} = \frac{1}{204}$$

$$\textcircled{b} \frac{1}{52} \cdot \frac{1}{51} = \frac{1}{2652}$$

$$\textcircled{c} \frac{4}{52} \cdot \frac{4}{51} = \frac{16}{2652} = \frac{8}{1326} = \frac{4}{663}$$

$$\textcircled{d} \frac{13}{52} \cdot \frac{12}{51} = \frac{156}{2652} = \frac{1}{17}$$

$$\textcircled{e} \frac{13}{52} \cdot \frac{13}{51} = \frac{169}{2652} = \frac{13}{204}$$

(4)

	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

- Sum of 6

$$\frac{5}{36}$$

- 4 ~ 1

$$\frac{2}{36} = \frac{1}{18}$$

- 2 even #'s

$$\frac{9}{36} = \frac{1}{4}$$

⑤ observed  $\frac{28}{60} \neq \frac{7}{15}$

Theoretical  $\frac{30}{60} \neq \frac{1}{2}$

⑥  $5 \cdot 3 \cdot 2 = 30$